

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number  
**WO 2004/094664 A1**

(51) International Patent Classification<sup>7</sup>: **C12Q 1/68**

(21) International Application Number:  
PCT/GB2004/001673

(22) International Filing Date: 16 April 2004 (16.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0308851.5 16 April 2003 (16.04.2003) GB

(71) Applicant (for all designated States except US): **LINGVITAE AS** [NO/NO]; Trimveien 6, A562, N-0372 Oslo (NO).

(71) Applicant (for AG only): **JAPPY, John, William, Graham** [GB/GB]; Gill Jennings & Every, Broadgate House, 7 Eldon Street, London EC2M 7LH (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LEXOW, Preben**

[NO/NO]; LingVitae AS, Trimveien 6, A562, N-0372 Oslo (NO). **RAGNHILDSTVEIT, Erlend** [NO/NO]; LingVitae AS, Trimveien 6, A562, N-0372 Oslo (NO).

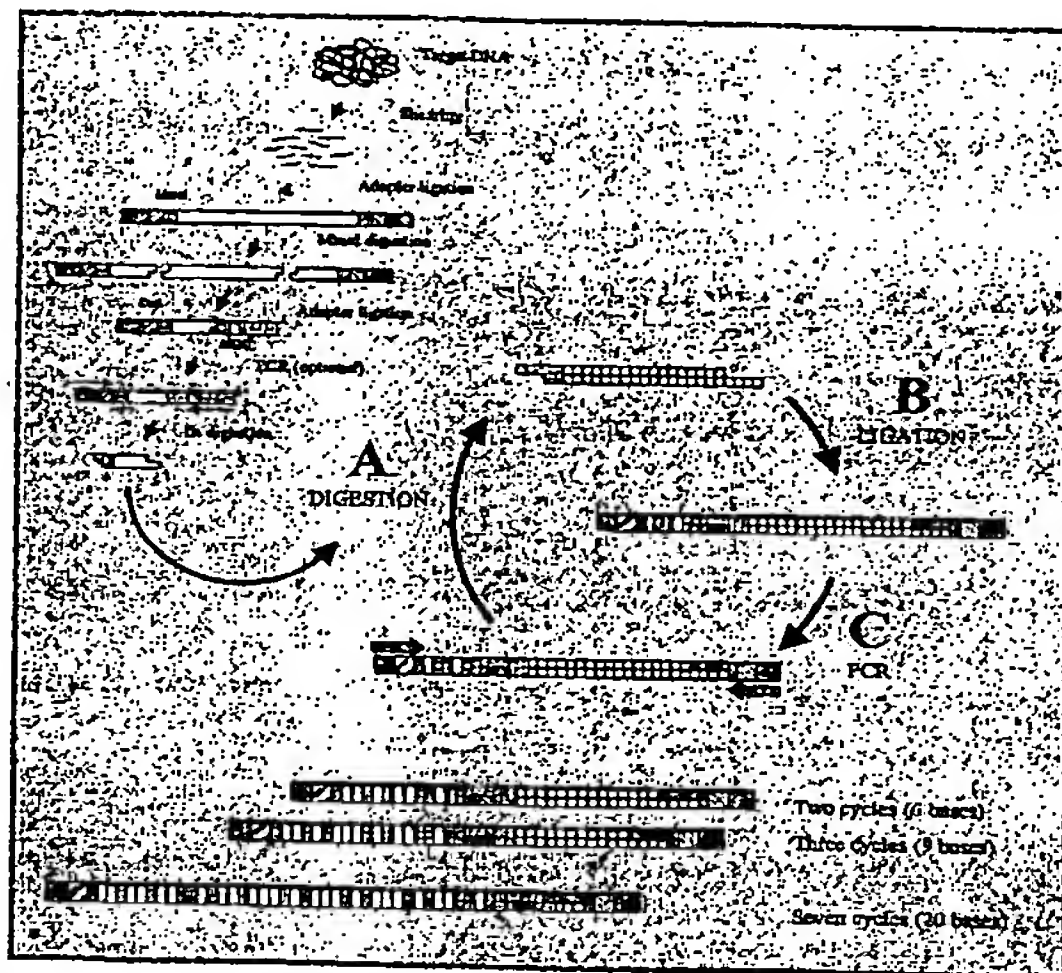
(74) Agent: **GILL JENNINGS & EVERY**; Broadgate House, 7 Eldon Street, London EC2M 7LH (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: **METHOD FOR CHARACTERISING POLYNUCLEOTIDES**



(57) Abstract: The method of the invention is used to identify specific characteristics of a target polynucleotide in a sample, and comprises the steps of: i) attaching to one end of each target polynucleotide in the sample a polynucleotide signal sequence that is specific for the characteristic under study; ii) contacting the target polynucleotides with a molecule that interacts with the target polynucleotide if the characteristic is present; iii) attaching a polynucleotide adapter sequence to those targets polynucleotides that interact with the molecule of step (ii), the adapter being attached at the end of the target polynucleotide opposite that at which the signal sequence is attached; iv) carrying out a polynucleotide amplification reaction on those target polynucleotides that comprise both the adapter and signal sequence, optionally repeating steps (i) to (iv) for other characteristics; and (v) identifying which signal sequences are present on the amplified products, and in which order, to thereby determine the characteristics of each target polynucleotide.



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.